

REMARKS

Claims 36-45 are pending in the application and stand rejected on various grounds as being anticipated and/or obvious in view of prior art references Cameron (WO 00/02803), Sundar (#6,322,312), and Bacchi (#6,275,748) or various combinations thereof.

The drawings have been objected to under 37 CFR 1.83(a) on the grounds that they fail to show features of the claimed invention. For reasons expressed below, no drawing amendments are considered necessary and none made.

Claim 36 is amended to clarify features of the invention.

Claim 43 is cancelled.

Reconsideration and allowance of all claims is respectfully requested in view of the amendments made and the remarks below.

In the Drawings

The Examiner has made two objections to the drawings under 37 CFR §1.83(a). In the first objection, the Examiner states that contact pad displacement and optically detecting contact pad displacement (claims 40, 41) must be shown or the feature(s) canceled from the claim(s). In the second objection, the Examiner states that a moving contact pad as specified on page 3 of 13, lines 17-20 should be shown.

Applicants note that the present application is a divisional from an original application filed nearly five years ago. There have been a total of six previous Office Actions issued between the two cases. It is only on this seventh Office Action that these objections have been raised to the drawings.

It is clear that 37 CFR 1.83(a) is not intended to require a showing of each feature claimed. If that were the case, then the many patents issued by the USPTO without drawings would be invalid on their face. Similarly, it is clear that if the specification and claims recite to a composition of a product using certain alternate materials, that there need not be multiple drawings with each material included.

Turning first to claims 40 and 41, the features claimed were in the claims as originally filed. The first Office Action had rejected claim 41 under 35 USC §112, first paragraph, as citing features not enabled by applicants' specification. Evidence was submitted at that time that the wafer sensor structure noted would be well-known to someone skilled in the art. The

submitted evidence was accepted and these §112 (and related 1.83(a)) rejections were not raised in the Final Office Action. The Patent Office cannot now re-raise an issue that was disposed of in an earlier action.

The Examiner has required that a moving contact pad as specified on page 3, lines 17-20. As such a feature is already shown in the drawings as filed, no further drawings are deemed necessary. In FIG. 3, for instance, wafer engaging pad 34 is shown with a contacting edge in a retracted position so that it is even with rest pads 36.

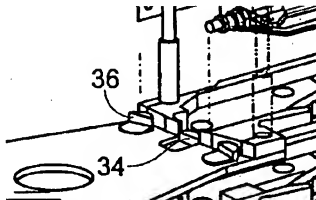


FIG. 3 (retracted position):
Vertical surface of moveable wafer engaging pad 34 aligned with fixed rest pads 36

Once the wafer-to-be-retained is inserted within the device, however, the wafer engaging pad 34 moves to a retaining position as shown in FIG. 4 where the contacting edge is no longer even with rest pads 36.

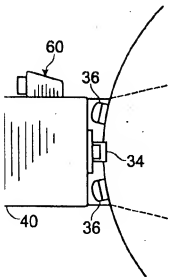


FIG. 4 (engaging position - plan view):
Wafer engaging pad 34 moved inward for edge contact with wafer W

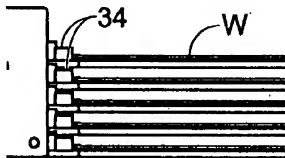
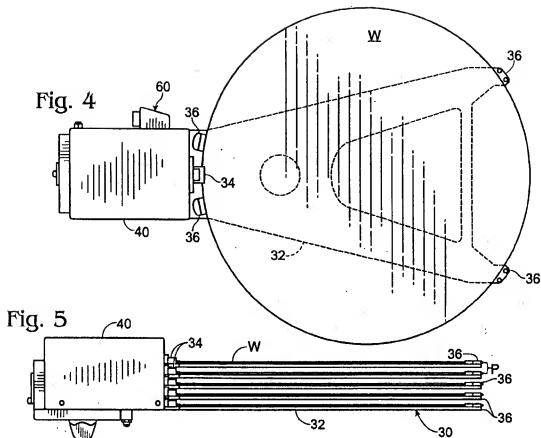


FIG. 5 (engaging position - side view)



Claim Rejections – 35 U.S.C. § 112

The Examiner has raised a rejection of claim 36 under 35 U.S.C. § 112, first paragraph, on the grounds that Applicants' specification does not make clear how non-pneumatic graspers mechanically grasps a wafer. The Examiner is again directed to FIGs. 4 and 5 (shown above) where wafer W is retained at three contact points between a moveable wafer engaging pad 34 and (fixed) first wafer rest pads 36. Accordingly, Applicants submit that means for mechanically grasping the wafers is explicitly shown in the specification and drawings. Furthermore, those knowledgeable in the art would recognize the term of art as being a clamping engagement of the wafer as shown in the *End Effectors Bible*, submitted as further evidence in the previously filed preliminary amendment.

The Examiner has also rejection claim 36 under 35 U.S.C. § 112, second paragraph, noting that lines 3-4 of claim 36 are confusing as they imply that each of the plurality of end-effectors includes a plurality of blades. So as to avoid further confusion, Applicants adopt the Examiner's suggested language in amending claim 36. Removal of the rejection is thus respectfully requested.

Claim Rejections – 35 U.S.C. § 102

Cameron

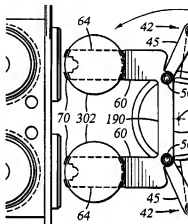
Claims 36-39 and 42-45 have been rejected under 35 U.S.C. § 102(b) as being anticipated by WO 00/02803 (Cameron, et al.).

Applicants reference amendments to claim 36 clarifying the operational step of mechanically grasping as occurring “by contact with opposing peripheral edges” of the wafer. The act of picking up a wafer, as in Cameron, is not equivalent to mechanically grasping edges of the wafer as shown, for example, by FIGs. 4 and 5 of the application.

Sundar

Claims 36, 37 and 43-45 have been rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 6,322,312 (Sundar).

Newly cited reference Sundar describes one embodiment (FIG. 2) of an edge-gripping wafer robot with two blades 64 for simultaneously moving two wafers. The Sundar blades are arranged side-by-side fashion and therefore take up nearly twice as much room as a stacked arrangement as in the present invention. Amendments to claim 36 make clear the distinction between the present invention and Sundar. Removal of the rejection is thus respectfully requested.



Claim Rejections – 35 U.S.C. § 103

Claims 40 and 41 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Cameron, et al., in view of U.S. Patent No. 6,275,748 (Bacchi, et al.). As base claim 36 has been amended, reconsideration is respectfully requested.

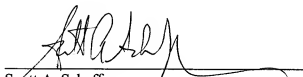
Claims 38-42 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Sundar, in view of Bacchi, et al. The combination of these references, however, do not teach a stacked arrangement of multiple end-effectors. As elements of the claims are missing from the prior art cited, rejection under §103(a) would be improper and applicants respectfully request removal of the rejection.

CONCLUSION

For the foregoing reasons, reconsideration and allowance of claims 36-42 and 44-45 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.

A handwritten signature in black ink, appearing to read 'Scott A. Schaffer', is written over a horizontal line.

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